WHAT IS CLAIMED IS:

1. A method of scanning a field of view of an imager across a field of regard using a scan mirror mounted on a gimbal having an inner axis and an outer axis, the method comprising:

sweeping the field of view across the field of regard in a selected direction by rotating the gimbal about the inner axis while maintaining the gimbal at a fixed angel with respect the outer axis so as to;

progressing to a subsequent scan position by rotating the gimbal about the outer axis by a predetermined increment angle while maintaining the gimbal at a fixed angle with respect the inner axis;

repeating the act of sweeping such that the selected direction is chosen alternately from a first direction and a second direction that is opposed to the first direction; and

repeating the act of progressing prior to each repeated act of sweeping;

wherein there is substantially no rotation, with respect to the instantaneous direction of scan, of an image formed on the imager.

2. An apparatus for scanning a two dimensional field of regard, the apparatus comprising:

a telescope having a focal plane and a field of view;

one or more image sensors disposed at the focal plane;

a single optically flat mirror disposed in the object space of the telescope;

wherein the flat mirror scans the field of view across the field of regard while maintaining a fixed relationship between the rotational direction of scan and the projection of the telescope's focal plane.

3. The apparatus of claim 2, wherein the image sensors are configured to perform time delay and integration imaging.

4. The apparatus of claim 2, wherein the image sensors are configured to perform multi-spectral imaging.

5. The apparatus of claim 2, wherein the image sensors are configured to perform hyperspectral imaging.

6. The apparatus of claim 2, further comprising:

a gimbal having an inner axis and an outer axis, the flat mirror being mounted on the gimbal;

wherein the field of view covers the two dimensional field of regard via a series of conical arcs, each arc being scanned by rotation about the inner axis of the gimbal.

7. The apparatus of claim 6, wherein an active scanning portion of each conical arc is separated from an active scanning portion of the subsequent conical arc by a brief vertical deflection interval.

8. The apparatus of claim 7, wherein rotation about the outer axis of the gimbal is stepped during the vertical deflection interval.

9. The apparatus of claim 7, wherein rotation about the outer axis of the gimbal is constant during the active scanning portion.

10. The apparatus of claim 7, wherein rotation about the inner axis of the gimbal remains substantially constant during the vertical deflection interval

11. The apparatus of claim 7, wherein rotation about the inner axis of the gimbal slews the scan back to a starting position during vertical deflection interval.

12. The apparatus of claim 2, wherein each conical arc is scanned at a constant angular velocity throughout the arc.

13. An apparatus for imaging a two dimensional field of regard, the apparatus comprising:

an imager having a field of view along a line of sight, the field of view being substantially smaller that the field of regard;

a scan mirror disposed so as to cast the line of sight onto the field of regard;

wherein the scan mirror causes the line of sight to be scanned across the field of regard in a conical arc.